ELECTRONIC BOOK WITH ENHANCED FEATURES

FIELD OF THE INVENTION

[0001] The present invention relates generally to electronic books.

BACKGROUND OF THE INVENTION

[0002] Electronic books have been provided in which a person can read electronic book files stored on a storage medium in a compact, hand-held housing. Text is presented on a display of the housing, and more than a single electronic book can be stored on the storage medium. In this way, a person can in effect transport a large number of books for reading at the person's leisure in a single lightweight electronic book form factor. As recognized herein, such electronic books can be made even more convenient and user-friendly.

SUMMARY OF THE INVENTION

[0003] An electronic book includes a housing, a visual display supported on the housing, and one or more audio output devices, such as speakers or a headphone jack, on the housing. A digital processor is in the housing in communication with the visual display and audio output device. Also, a tangible computer-reader storage medium is in the housing and is accessible to the processor or input/output interface such as a universal serial bus (USB) interface. Electronic book files are stored on the medium for presentation of book information under control of the processor.

[0004] The processor may execute logic that includes receiving a user selection of a format in which to present an electronic book, and in response to a selection of an audio format, playing an audio file corresponding to a selected electronic book on the audio output device and establishing a bookmark in a visual file corresponding to the selected audio file at a top of a page in the visual file corresponding to a last-spoken word in the audio file. In contrast, in response to a selection of a visual mode, the logic includes presenting text from a visual file corresponding to a selected electronic book on the display and establishing a bookmark in an audio file corresponding to the selected video file at the start of a sentence in the audio file containing the text of the visual file that was presented on the display upon receipt of a signal to change mode or power down such that the corresponding audio file does not subsequently start mid-sentence upon invocation of the electronic book in the audio format.

[0005] In example embodiments an audio file being played has control of the bookmark in the corresponding video file. Likewise, a video file being played may have control of the bookmark in the corresponding audio file.

[0006] In some example implementations a user can select a page location in the visual file to bookmark when an audio file is terminated. The page in the visual file corresponding to the last-spoken word in the audio file can be the page containing the last-spoken word. Or, the page in the visual file corresponding to the last-spoken word in the audio file can be a page "n" pages prior to the page in the video file containing the last-spoken word, wherein "n" is an integer.

[0007] If desired, both the audio file and visual file may be executed simultaneously, as the user listens to the audio file while reading the visual file. Control of the bookmark may remain with the audio file, so that if a user skips ahead in the visual file, the audio file maintains a bookmark at a location in the audio file being played when a "skip" signal is received. Or, the opposite bookmark control may be established, i.e., control may remain with the visual file so that if a user skips ahead in the audio file, the visual file maintains a bookmark at a location in the visual file being displayed when a "skip" signal is received in the audio file. The user may be given the option of selecting which file maintains bookmark control when both files are played simultaneously.

[0008] In another aspect, an electronic book includes a housing, a visual display supported on the housing, and one or more audio output devices on the housing. A digital processor is in the housing in communication with the visual display and audio output device. Also, a tangible computer-reader storage medium is in the housing and is accessible to the processor. Electronic book files are stored on the medium for presentation of book information under control of the processor.

[0009] The medium can store a data structure that is accessible to the processor and that synchronizes an audio file with a related visual file at least in part by indexing each text segment in the visual file with a start of a nearest sentence in the audio file containing text in the segment of the visual file. Thus, a text segment comprising the first "n" words in the visual file is linked to the start of the first sentence in the audio file, the next (n through m) words in the visual file are linked to a start of a second sentence in the audio file, etc. In this way, each and every word in the visual file need not be linked to a respective unique word in the audio file, but instead groups of words in the visual file are linked as a group to a single place in the audio file.

[0010] In another aspect, an electronic book includes a housing, a visual display supported on the housing, and one or more audio output devices on the housing. A digital processor is in the housing in communication with the visual display and audio output device. Also, a tangible computer-reader storage medium is in the housing and is accessible to the processor. Electronic book files are stored on the medium for presentation of book information under control of the processor.

[0011] In this latter aspect, visual segments in a visual file are correlated to respective starts of respective sentences in an audio file corresponding to the visual segments so that if a user switches from visual mode to audio mode the audio mode does not start mid-sentence. On the other hand, each segment in the audio file is linked to a start of a page in the visual file. It may now be readily appreciated that the audio-to-visual link grouping can be different than the visual-to-audio link grouping, i.e., that the bookmark is not necessarily symmetric.

[0012] The details of the present invention, both as to its structure and operation, can best be understood in reference to the accompanying drawings, in which like reference numerals refer to like parts, and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** is a perspective view of an example electronic book in the closed configuration;

[0014] FIG. **2** is a perspective view showing the electronic book of FIG. **1** in the open configuration;

[0015] FIG. **3** is a perspective view of an example electronic book with the processor, storage medium, and transceivers shown schematically;

[0016] FIG. **4** is example logic in accordance with present principles; and